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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/704,725	11/03/2000	Andreas Tauch	P 274355 990111BT-PAT	7227

909 7590 06/04/2002

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EXAMINER
HUTSON, RICHARD G

ART UNIT	PAPER NUMBER
1652	13

DATE MAILED: 06/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/704,725	TAUCH ET AL.	
	Examiner	Art Unit	
	Richard G Hutson	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 April 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) *1 and 8* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *2-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11/3/2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Applicants cancellation of the claims in the non-elected groups (i.e. Claims 9-12), Paper No. 10, 3/1/2002, is acknowledged. Claims 1-8 are still at issue and are present for examination.

Election/Restrictions

Applicant's election without traverse of Group I, Claims 1-8 in Paper No. 10 is acknowledged. Applicant's election without traverse of the species of plasmid pSELF3-1, encompassed by claims 2-7, in Paper No. 12 is acknowledged.

Claims 1 and 8 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Priority

Applicants claim to priority from German Application No. DE 199 53 206.0, filed November 5, 1999, the subject matter of which is incorporated by reference, is acknowledged.

Information Disclosure Statement

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate

paper." Therefore, unless the references have been cited by the examiner on form PTO-892 or PTO-1449, they have not been considered.

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

Non-initialed and/or non-dated alterations have been made to the oath or declaration. See 37 CFR 1.52(c).

Drawings

The drawings are objected to for the reasons cited in the enclosed form PTO 948.

Specification

The disclosure is objected to because of the following informalities: On page 5, lines 6-9 the specification, applicants recite:

"The present invention also provides composite plasmids which contain at least a part of the active substance resistance(s) and pGA1 and/or pGA2 from the novel plasmids according to the invention." This sentence is unclear and appears to be missing something.

Appropriate correction is required.

Claim Objections

Claim 5 is objected to because of the following informalities:

Claim 5 recites "...according to claim 2, which contain at least..." This should recite "...according to claim 2, which contains at least..."

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2-5 are indefinite in that applicants recitation "composite plasmid" is confusing in that it is unclear if and how a "composite plasmid" is different from a "plasmid". Given that it is understood in the art that plasmids generally comprise a number of different genes or nucleic acid sequences which encode proteins involved in antibiotic resistance and replication etc.. it is unclear what the designation "composite" adds to the instant claims and if it in any way further limits the claim. This is further apparent given that claims 6 and 7 appear to be drawn to the same invention, yet refer to a "plasmid vector" rather that a "composite plasmid". It is suggested that an

amendment such as reciting simply "plasmid" or "plasmid vector" would overcome this rejection.

Claim 6 is indefinite in that it is confusing in the recitation: "ii) at least one active substance resistance from one of the plasmids pTET3..." It is believed that applicants intent is that this recitation states "ii) at least one active substance resistance **region** from one of the plasmids pTET3..." and this is how the claim has been interpreted by the office. It is suggested that applicants amend this claim to clearly reflect there intentions.

Claims 2-6 are indefinite in that applicants recitation "active substance resistance" is confusing in that it is unclear what applicants intend to be encompassed by "active substance resistance". While claim 3 is drawn to the plasmid of claim 2, which contains at least one region for "active substance resistance" from plasmid pTET3, and the only "resistance regions" on the plasmid pTET3 that are discussed are those involved in "antibiotic resistance" (i.e. tetracycline, spectinomycin and streptomycin), the specification does not describe or define what applicants consider to be "active substance resistance" and thus the phrase appears to be greater in scope that "antibiotic resistance", yet the metes and bounds of the claim are unclear.

It is noted that the office interprets claim 3, which recites "the composite plasmid according to claim 2, which contains at least one region for active substance resistance from the plasmid pTET3" as being drawn to the composite plasmid according to claim 2, which contains at least one region for active substance resistance from the plasmid pTET3, wherein said region for active substance resistance is selected from the

polynucleotide sequence which encodes the tetA (SEQ ID NO: 7), tetR (SEQ ID NO: 10) and spectinomycin/streptomycin resistance (SEQID NO: 8) proteins or antibiotic resistance encoding fragments thereof, since these are the only "active substance resistance" regions described in pTET3 by applicants.

Claim 2 parts ii) and part iii) are unclear in the recitation "...**derived** from ..." What do applicants consider "derived" to mean and at what point is something no longer derived?

Claim 6, part ii) which is drawn to a limitation of the claimed plasmid vector as containing at least one active substance resistance region from the plasmid pTET3 is also interpreted as claim 3 above in that it is limited to said region for active substance resistance that is selected from the polynucleotide sequence which encodes the tetA (SEQ ID NO: 7), tetR (SEQ ID NO: 10) and spectinomycin/streptomycin resistance (SEQID NO: 8) proteins or antibiotic resistance encoding fragments thereof.

It is further noted that the office interprets the phrase in claim 2 iv) "at least one region that expresses a protein for active substance resistance" as "at least one region that **encodes** a protein for active substance resistance".

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2, 3, 4, 5 and 6 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as

to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 2, 4 and 5 are directed to all possible plasmids capable of autonomous replication in coryneform bacteria, said plasmids comprising: i) at least a portion of the nucleotide sequence of plasmid pTET3 or pCRY4, ii) at least one DNA replication region derived from one of the plasmids pTET3 or pCRY4, iii) a gene fragment which is derived from *E. coli*, B. subtilis or Streptomyces and may multiply therein, and iv) at least one region that expresses a protein for active substance resistance (Claim 2), wherein said plasmid contains at least a portion of the nucleotide sequences of plasmids pGA1 and/or pGA2 (Claim 4), wherein said plasmid contains at least one DNA fragment which encodes a gene from the biosynthetic pathway of a vitamin, a nucleotide or an L-amino acid and is expressed in coryneform bacteria (Claim 5). The specification, however, only provides the representative species isolated from *Corynebacterium glutamicum*, pTET3, pCRY4 and their derivatives, pSELF3-1 and pSELF1-1 encompassed by these claims. The specification fails to describe additional representative species of these plasmids by any identifying structural characteristics or properties other than the activities recited in claim 2, for which no predictability of structure is apparent. Applicants attention is further drawn to Claim 2, parts i), ii) and iii) which is vague in the recitation of "derived from" and potentially reads on any nucleotide sequence as small as a nucleotide and part iv) which reads on any polynucleotide that encodes any protein for "active substance resistance" (See above 112 2nd paragraph rejection). Given this lack of additional representative species as encompassed by the

claims, Applicants have failed to sufficiently describe the claimed invention, in such full, clear, concise, and exact terms that a skilled artisan would recognize Applicants were in possession of the claimed invention.

Applicant is referred to the revised guidelines concerning compliance with the written description requirement of U.S.C. 112, first paragraph, published in the Official Gazette and also available at www.uspto.gov.

Claims 2-7 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The invention appears to employ novel plasmids, pTET3, pCRY4, pGA1, pGA2, and pSELF3-1. Since the plasmids are essential to the claimed invention, they must be obtainable by a repeatable method set forth in the specification or otherwise be readily available to the public. The claimed plasmids' sequences are not fully disclosed, nor have all the sequences required for their construction been shown to be publicly known and freely available. The enablement requirements of 35 U.S.C. § 112 may be satisfied by a deposit of the plasmids. The specification does not disclose a repeatable process to obtain the plasmids and it is not apparent if the DNA sequences are readily available to the public. Accordingly, it is deemed that a deposit of these plasmids should have been made in accordance with 37 CFR 1.801-1.809.

If the deposit has not been made under the Budapest treaty, then in order to certify that the deposit meets the criteria set forth in 37 CFR 1.801-1.809, applicants may provide assurance or compliance by an affidavit or declaration, or by a statement by an attorney of record over his or her signature and registration number, showing that:

1. during the pendency of this application , access to the invention will be afforded to the Commissioner upon request;

2. all restrictions upon availability to the public will be irrevocably removed upon granting of the patent;

3. the deposit will be maintained in a public repository for a period of 30 years or 5 years after the last request or for the effective life of the patent, whichever is longer; and

4. the deposit will be replaced if it should ever become inviable.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Zhang et al. (Journal of Bacteriology, Vol 176, No. 18, September 1994, pages 5718-5728).

Zhang et al. teach a plasmid pEP2 which encodes a protein RepA, which is essential and rate limiting for its replication in *Escherchia coli* and *Corynebacterium pseudotuberculosis*. The taught plasmid is capable of autonomous replication in coryneform bacteria, said plasmid comprising: i) at least a portion of the nucleotide sequence of plasmid pTET3 or pCRY4, as the sequence "ATG" encompasses a portion of the sequence of plasmid pTET3 or pCRY4, ii) at least one DNA replication region derived from one of the plasmids pTET3 or pCRY4, as the RepA protein encoded by the plasmid pEP2 is 64 % homologous to the instantly disclosed repA protein of pTET3 having the sequence of SEQ ID NO: 3and thus the replication region that encodes the repA protein of Zhang et al. is encompassed by DNA replication region derived from one of the plasmids pTET3 or pCRY4, iii) a gene fragment which is derived from *E. coli* and may multiply therein, and iv) at least one region that expresses a protein for active substance resistance, that of kanamycin resistance.

Claims 2 and 5 are rejected under 35 U.S.C. 102(a) as being anticipated by Guillouet et al. (Applied and Environmental Microbiology, Vol 65, No. 7, July 1999, pages 3100-3107).

Guillouet et al. teach the expression of the *E. coli* catabolic threonine dehydratase in C. glutamicum and its effect on isoleucine production. Guillouet et al. teach the plasmid pAPE7 which is capable of autonomous replication in coryneform bacteria, said plasmid comprising: i) at least a portion of the nucleotide sequence of plasmid pTET3 or pCRY4, as the sequence "ATG" encompasses a portion of the sequence of plasmid pTET3 or pCRY4 and ii) at least one DNA replication region

derived from one of the plasmids pTET3 or pCRY4, as the NG2 rep protein encoded by the plasmid pAPE7 is from the plasmid pEP2 (Zhang et al. (Journal of Bacteriology, Vol 176, No. 18, September 1994, pages 5718-5728). Zhang et al. is only used as evidence to show that the protein encoded by pAPE7 (the same as that encoded by pEP2) is 64 % homologous to the instantly disclosed repA protein of pTET3 having the sequence of SEQ ID NO: 3. Thus the replication region that encodes the NG2 rep protein of Guillouet et al. is encompassed by a DNA replication region derived from one of the plasmids pTET3 or pCRY4. The plasmid taught by Guillouet et al. further comprises: iii) a gene fragment which is derived from *E. coli* and may multiply therein, and iv) at least one region that expresses a protein for active substance resistance, that of kanamycin resistance, thus anticipating claim 2. The plasmid taught by Guillouet et al. further comprises a DNA fragment which encodes a gene from the biosynthetic pathway of the amino acid, isoleucine, threonine dehydratase, thus anticipating claim5.

Remarks

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard G Hutson whose telephone number is (703) 308-0066. The examiner can normally be reached on 7:30 am to 4:00 pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapu Achutamurthy can be reached on (703) 308-3804. The fax

phone numbers for the organization where this application or proceeding is assigned are (703) 305-3014 for regular communications and (703) 305-3014 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

Richard Hutson, Ph.D.
Patent Examiner
Art Unit 1652
June 3, 2002